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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/807,867

DATE: 08/30/2001
TIME: 11:43:34

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ENTERED

3 <110> APPLICANT: CAROL, Pierre
4 KUNTZ, Marcel
5 MACHE, Regis
7 <120> TITLE OF INVENTION: cDNA SEQUENCE TRANSCRIBING AN mRNA ENCODING THE TERMINAL
OXIDASE
8 ASSOCIATED WITH CAROTENOID BIOSYNTHESIS, AND USES THEREOF
10 <130> FILE REFERENCE: 109326
12 <140> CURRENT APPLICATION NUMBER: US 09/807,867
13 <141> CURRENT FILING DATE: 2001-06-15
15 <150> PRIOR APPLICATION NUMBER: PCT/IB99/01719
16 <151> PRIOR FILING DATE: 1999-10-20
18 <150> PRIOR APPLICATION NUMBER: FR 9813283
19 <151> PRIOR FILING DATE: 1998-10-20
21 <160> NUMBER OF SEQ ID NOS: 10
23 <170> SOFTWARE: PatentIn version 3.0
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 1396
27 <212> TYPE: DNA
28 <213> ORGANISM: Arabidopsis thaliana
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35 ctgacggaga tggcggcgat ttcaggcatc tcctctggta cgttgacgat ttcacggcct 180
37 ttggttactc ttcgacgctc tagagccgcc gtttcgtaca gtcctctca ccgattgctt 240
39 catcatcttc ctctctcttc tcgtcgtctg ctattaagga acaatcatcg agtccaagca 300
41 acgattttgc aagacgatga agagaaagtg gtggtggagg aatcgtttaa agccgagact 360
43 tctactggta cagaaccact tgaggagcca aatatgagtt cttcttcaac tagtgctttt 420
45 gagacatgga tcatcaagct tgagcaagga gtgaatgttt tccttacaga ctcggttatt 480
47 aagatacttg acactttgta tcgtgaccga acatatgcaa ggttctttgt tcttgagaca 540
49 attgctagag tgccttattt tgcgtttatg tctgtgctac atatgtatga gacctttggt 600
51 tgggtggagga gagcagatta tttgaaagta cactttgctg agagctggaa tgaaatgcat 660
53 cacttgctca taatggaaga attgggtgga aattcttggt ggtttgatcg ttttctggct 720
55 cagcacatag caaccttcta ctacttcatg acagtgttct tgtatatctt aagccctaga 780
57 atggcatatc actttttcgg atgtgtggag agtcatgcat atgagactta tgataaattt 840
59 ctcaaggcca gtggagagga gttgaagaat atgcctgcac cggatatcgc agtaaaatac 900
61 tatacgggag gtgacttgta cttatttgat gagttccaaa catcaagaac tcccaatact 960
63 cgaagaccag taatagaaaa tctatacgat gtgttttgta acataagaga tgatgaagca 1020
65 gaacactgca agacaatgag agcttgtcag actctaggca gtctgcgttc tccacactcc 1080
67 attttagatg atgatgatac tgaagaagaa tcagggtgtg ttgttcctga ggaggctcat 1140
69 tgcgaaggta ttgtagactg cctcaagaaa tccattacaa gttaataaat tagaaagtaa 1200
71 actaaaaaag attatttgta tcagctcatg aacaatagat ataatcccat atacttgga 1260
73 ataaaggaat aatgtgaaat tcccatcggt gtgctagtgt gtgagagaat caaataccct 1320
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80 <210> SEQ ID NO: 2
81 <211> LENGTH: 351
82 <212> TYPE: PRT
83 <213> ORGANISM: Arabidopsis thaliana

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90 Pro Leu Val Thr Leu Arg Arg Ser Arg Ala Ala Val Ser Tyr Ser Ser
91          20          25          30
93 Ser His Arg Leu Leu His His Leu Pro Leu Ser Ser Arg Arg Leu Leu
94          35          40          45
96 Leu Arg Asn Asn His Arg Val Gln Ala Thr Ile Leu Gln Asp Asp Glu
97          50          55          60
99 Glu Lys Val Val Val Glu Glu Ser Phe Lys Ala Glu Thr Ser Thr Gly
100 65          70          75          80
102 Thr Glu Pro Leu Glu Glu Pro Asn Met Ser Ser Ser Ser Thr Ser Ala
103          85          90          95
105 Phe Glu Thr Trp Ile Ile Lys Leu Glu Gln Gly Val Asn Val Phe Leu
106          100          105          110
108 Thr Asp Ser Val Ile Lys Ile Leu Asp Thr Leu Tyr Arg Asp Arg Thr
109          115          120          125
111 Tyr Ala Arg Phe Phe Val Leu Glu Thr Ile Ala Arg Val Pro Tyr Phe
112          130          135          140
114 Ala Phe Met Ser Val Leu His Met Tyr Glu Thr Phe Gly Trp Trp Arg
115 145          150          155          160
117 Arg Ala Asp Tyr Leu Lys Val His Phe Ala Glu Ser Trp Asn Glu Met
118          165          170          175
120 His His Leu Leu Ile Met Glu Glu Leu Gly Gly Asn Ser Trp Trp Phe
121          180          185          190
123 Asp Arg Phe Leu Ala Gln His Ile Ala Thr Phe Tyr Tyr Phe Met Thr
124          195          200          205
126 Val Phe Leu Tyr Ile Leu Ser Pro Arg Met Ala Tyr His Phe Ser Glu
127          210          215          220
129 Cys Val Glu Ser His Ala Tyr Glu Thr Tyr Asp Lys Phe Leu Lys Ala
130 225          230          235          240
132 Ser Gly Glu Glu Leu Lys Asn Met Pro Ala Pro Asp Ile Ala Val Lys
133          245          250          255
135 Tyr Tyr Thr Gly Gly Asp Leu Tyr Leu Phe Asp Glu Phe Gln Thr Ser
136          260          265          270
138 Arg Thr Pro Asn Thr Arg Arg Pro Val Ile Glu Asn Leu Tyr Asp Val
139          275          280          285
141 Phe Val Asn Ile Arg Asp Asp Glu Ala Glu His Cys Lys Thr Met Arg
142          290          295          300
144 Ala Cys Gln Thr Leu Gly Ser Leu Arg Ser Pro His Ser Ile Leu Asp
145 305          310          315          320
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148          325          330          335
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153 <210> SEQ ID NO: 3
154 <211> LENGTH: 1387
155 <212> TYPE: DNA
156 <213> ORGANISM: capsicum

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163 attctctatt ttcacttagg aattctcata gaacttttca gccttcgtta tcaaggaaat 180
165 caagtagagt tcgagcaacg ttgttaaaag agaatgaaga agaagtgggt gtggagaaat 240
167 cttttgcacc taagagtttt cctggtaatg tgggaggggg aaataatggg gagccacccg 300
169 ataattcatc ctggaacggt ctggagaaat gggttataaa gattgagcag tctgtaaata 360
171 tctttctcac ggattcagtg ataaagattc ttgacacttt gtatcacgac cgacactatg 420
173 cgaggttttt cgttctggaa acaattgcaa gaggttcctta ttttgcatth atatctgttc 480
175 ttcacttgta cgagagcttt gggttggtgga gacgagcaga ttatctgaag gtgcattttg 540
177 ccgagagctg gaatgagatg caccattttac tcattatgga ggaattaggt ggaaatgctt 600
179 ggtggtttga ccgatttcctt ggcgaacata ttgctgtatt ctattatttc atgacagtct 660
181 cgatgtatgc tttgagcccg agaatggcat atcattttctc tgaatgtgtg gagcaccatg 720
183 catacgagac ttacgataaa ttcatcaagg atcaagaagc ggaattgaag aaattgcccg 780
185 ctccaaagat tgcagtgagc tactacaccg gaggtgactt gtatttggtc gatgagtttc 840
187 aaacatcacg agagcctaact actogaaggc caaaaataga taatctgtac gacgtattca 900
189 tgaacatcac agatgacgaa gcagagcatt gtaagacaat gaaagcgtgt caaaccatg 960
191 ggagcctccg ctcccctcac acaaatccat gcgatgagtc tgaagacgat ccaggttggt 1020
193 cagtgcctca ggccgattgt gtaggtatcg tggattgtat aacgaaatct gtcgctgatc 1080
195 ctaacgctcg cagaaggtag ggaaaggaaa aacgcagaa gaaactatac atgtatatac 1140
197 cagtacagcc aaatatacaa gaaatataca tacatattgt atcttttact ctctgaggaa 1200
199 gagcttgta aattgcccga aaaatgggta ggcacttggt tttgttttca cctttcaata 1260
201 atttgtaact aactatgaac aaatttgctc cggcacacta caactccata ggggtcctgt 1320
203 tacgcttctg aactaaattt taacatattt ttgtcaacct tctcagcaaa aaaaaaaaaa 1380
205 aaaaaaa

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209 <211> LENGTH: 357

210 <212> TYPE: PRT

211 <213> ORGANISM: capsicum

213 <400> SEQUENCE: 4

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219 20 25 30
221 Ser Leu Phe Ser Leu Arg Asn Ser His Arg Thr Phe Gln Pro Ser Leu
222 35 40 45
224 Ser Arg Lys Ser Ser Arg Val Arg Ala Thr Leu Leu Lys Glu Asn Glu
225 50 55 60
227 Glu Glu Val Val Val Glu Lys Ser Phe Ala Pro Lys Ser Phe Pro Gly
228 65 70 75 80
230 Asn Val Gly Gly Gly Asn Asn Gly Glu Pro Pro Asp Asn Ser Ser Ser
231 85 90 95
233 Asn Gly Leu Glu Lys Trp Val Ile Lys Ile Glu Gln Ser Val Asn Ile
234 100 105 110
236 Phe Leu Thr Asp Ser Val Ile Lys Ile Leu Asp Thr Leu Tyr His Asp
237 115 120 125
239 Arg His Tyr Ala Arg Phe Phe Val Leu Glu Thr Ile Ala Arg Val Pro
240 130 135 140
242 Tyr Phe Ala Phe Ile Ser Val Leu His Leu Tyr Glu Ser Phe Gly Trp

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246					165				170						175	
248	Glu	Met	His	His	Leu	Leu	Ile	Met	Glu	Glu	Leu	Gly	Gly	Asn	Ala	Trp
249				180					185					190		
251	Trp	Phe	Asp	Arg	Phe	Leu	Ala	Gln	His	Ile	Ala	Val	Phe	Tyr	Tyr	Phe
252			195					200					205			
254	Met	Thr	Val	Ser	Met	Tyr	Ala	Leu	Ser	Pro	Arg	Met	Ala	Tyr	His	Phe
255		210					215					220				
257	Ser	Glu	Cys	Val	Glu	His	His	Ala	Tyr	Glu	Thr	Tyr	Asp	Lys	Phe	Ile
258	225					230				235					240	
260	Lys	Asp	Gln	Glu	Ala	Glu	Leu	Lys	Lys	Leu	Pro	Ala	Pro	Lys	Ile	Ala
261					245					250					255	
263	Val	Ser	Tyr	Tyr	Thr	Gly	Gly	Asp	Leu	Tyr	Leu	Phe	Asp	Glu	Phe	Gln
264				260					265					270		
266	Thr	Ser	Arg	Glu	Pro	Asn	Thr	Arg	Arg	Pro	Lys	Ile	Asp	Asn	Leu	Tyr
267		275					280						285			
269	Asp	Val	Phe	Met	Asn	Ile	Arg	Asp	Asp	Glu	Ala	Glu	His	Cys	Lys	Thr
270		290				295						300				
272	Met	Lys	Ala	Cys	Gln	Thr	His	Gly	Ser	Leu	Arg	Ser	Pro	His	Thr	Asn
273	305				310					315					320	
275	Pro	Cys	Asp	Glu	Ser	Glu	Asp	Asp	Pro	Gly	Cys	Ser	Val	Pro	Gln	Ala
276				325						330					335	
278	Asp	Cys	Val	Gly	Ile	Val	Asp	Cys	Ile	Thr	Lys	Ser	Val	Ala	Asp	Pro
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294	gcgatttcga	tttctgctat	gagttttgga	acctcagttt	cttcatattc	ttgttttaga									180	
296	gctaggagtt	ttgagaagtc	atcagtttta	tgcaattccc	agaacccatg	tcggtttaat									240	
298	tctgtttttc	cgattcggaa	atctgatggg	gcttcacggt	gttctgtttc	taggaaatca									300	
300	tgtagagttc	gagcaacggt	gttacaagag	aatgaagaag	aagtgggtgt	ggagaaatct									360	
302	tttgcaccta	agagttttcc	tgataacgtg	ggagggggaa	gtaatgggaa	gccaccagat									420	
304	gattcatcct	ctaacggtct	agagaaatgg	gttataaagc	ttgagcagtc	tgtaaataatc									480	
306	ttactcacgg	attcagtgat	aaagattcct	gacactttgt	atcacaaccg	aaactatgcg									540	
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312	gaaagctgga	atgagatgca	ccatttgctc	attatggaag	aattaggggg	aaatgcttgg									720	
314	tggtttgatc	gatttcttgc	acaacatata	gctatatctt	attatttcat	gacagtcttg									780	
316	atgtatgctt	tgagcccag	aatggcatat	catcttctctg	aatgtgtgga	gagccatgca									840	
318	tacgagactt	acgataaatt	catcaaggat	caaggagagg	aattgaagaa	tttgcccgct									900	
320	ccaaagattg	cagtggacta	ctacacggga	ggtgacttat	atttatttga	tgagtttcaa									960	
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324 aacattagag atgacgaagc agagcattgt aaaacgatga aagcctgtca aactcacggg 1080
326 agccttcgtt ctccacacac agatccatgc gatgattctg aagatgatac aggggtgtcc 1140
328 gtacctcaag ctgattgtat aggtatcgtg gattgtataa agaagtcagt caccgatact 1200
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336 <211> LENGTH: 19
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340 <220> FEATURE:
341 <223> OTHER INFORMATION: PCR primer ✓
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352 <220> FEATURE:
353 <223> OTHER INFORMATION: PCR primer ✓
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360 <211> LENGTH: 171
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362 <213> ORGANISM: soybean
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372 Pro Gly Met Val Gly Gly Met Leu His Leu Arg Ser Leu Arg Lys
373 35 40 45
375 Phe Gln Gln Ser Gly Gly Trp Ile Lys Ala Leu Leu Glu Glu Ala Glu
376 50 55 60
378 Asn Glu Arg Met His Leu Met Thr Met Val Glu Leu Val Lys Pro Lys
379 65 70 75 80
381 Trp Tyr Glu Arg Leu Leu Val Leu Ala Val Gln Gly Val Phe Phe Asn
382 85 90 95
384 Ala Phe Phe Val Leu Tyr Ile Leu Ser Pro Lys Val Ala His Arg Ile
385 100 105 110
387 Val Gly Tyr Leu Glu Glu Glu Ala Ile His Ser Tyr Thr Glu Tyr Leu
388 115 120 125
390 Lys Asp Leu Glu Ser Gly Ala Ile Glu Asn Val Pro Ala Pro Ala Ile
391 130 135 140
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394 145 150 155 160
396 Ile Thr Val Ile Arg Ala Asp Glu Ala His His
397 165 170
399 <210> SEQ ID NO: 9

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VERIFICATION SUMMARY

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